

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

**ERICSSON INC., AND  
TELEFONAKTIEBOLAGET LM ERICSSON,**

**Plaintiff,**

**v.**

**TCL COMMUNICATION TECHNOLOGY  
HOLDINGS, LTD., TCT MOBILE LIMITED,  
AND TCT MOBILE (US), INC.,**

**Defendant.**

**Civil Action No. 2:15-cv-00011-RSP**

**JURY TRIAL**

**DECLARATION OF MARK JONES, PH.D. IN SUPPORT OF PLAINTIFFS' OPENING  
BRIEF REGARDING TCL'S REQUEST FOR ADDITIONAL CLAIM CONSTRUCTION**

I, Mark Jones, declare as follows:

**I. INTRODUCTION**

1. I make this declaration in support of Plaintiffs Ericsson Inc. and Telefonaktiebolaget LM Ericsson's ("Ericsson") Opening Claim Construction Brief. Unless otherwise noted, the statements made herein are based on my personal knowledge, and if called to testify in Court, I could and would testify competently and truthfully with regards to this matter.

2. My name is Mark Jones. This declaration was prepared at the behest of McKool Smith, P.C. on behalf of their client Ericsson. The purposes of this declaration is to support Ericsson's Opening Claim Construction Brief. I understand this declaration is to be used in the matter of *Ericsson, Inc., et al. v. TCL Communication Technology Holdings, LTD, et al.*, 2:15-cv-11-RSP. I have been asked to review the below identified patents and related materials and

based upon that review to provide my expert opinion regarding the proper construction for various terms.

3. I am being compensated at my usual consulting rate of \$450 per hour for my work related to this dispute. My compensation is in no way dependent on the outcome of this dispute or the testimony or opinions that I give.

4. My curriculum vitae and testimony list are included in Exhibit A to this declaration.

5. My opinions and conclusions are fully discussed in later sections of this report.

6. In reaching these opinion and conclusions, I have relied upon my education, experience and training, my review of the patents, the patent prosecution history, and my review of the evidence produced in this matter. A list of materials relied upon is provided at the end of this report.

7. I wish to reserve any right that I may have to supplement this declaration if further information becomes available or if I am asked to consider additional information. Furthermore, I wish to reserve any right that I may have to consider and comment on any additional expert statements and testimony of TCL's experts in this matter. I may also rely on demonstrative exhibits to explain my testimony and opinions.

**A. Education and Experience**

8. I am a Professor of Electrical and Computer Engineering at Virginia Tech in Blacksburg Virginia. I graduated summa cum laude from Clemson University in 1986 with a B.S. in Computer Science and a minor in Computer Engineering while holding a National Merit Scholarship and the R. F. Poole Scholarship. I then graduated from Duke University in 1990 with a PhD in Computer Science while holding the Von Neumann Fellowship.

9. Upon graduation, I joined the Department of Energy at their Argonne National Laboratory facility. My responsibilities there included the design and use of software for computers with hundreds of processing elements. This software was designed for compatibility with new parallel computer architectures as they became available as well as with other large software components being written in the Department of Energy. While with DOE, I received the IEEE Gordon Bell Prize.

10. In 1994, I joined the Computer Science faculty at the University of Tennessee. My teaching responsibilities included computer architecture and computer networking. My research interests included the design and use of software that used the collective power of large groups of workstations. While at the University of Tennessee, I received a CAREER Award from the National Science Foundation.

11. In 1997, I joined the Electrical and Computer Engineering faculty at Virginia Tech. My teaching responsibilities have included the design of embedded systems, computer organization, computer architecture, a variety of programming courses, and parallel computing. I have been cited multiple times on the College of Engineering's Dean's List for teaching.

12. In addition to the activities, education, and professional experience listed above, I have been involved in research projects that contribute to my expertise relating to this report. While at Virginia Tech, I have been a primary or co-investigator on government and industrial research grants and contracts in excess of five million dollars.

13. The majority of the research contracts undertaken in the laboratory have involved collaboration and coordination with other groups to build a larger system. My responsibilities under the SLAAC project (a collaborative effort funded by the Defense Advanced Research Projects Agency involving the University of Southern California, Sandia National Laboratory,

Los Alamos National Laboratory, Brigham Young University, UCLA, Lockheed-Martin, and the Navy) included the development of a software system for monitoring, configuring, and controlling a networked collection of computers hosting specialized computer hardware. As part of the DSN project (a collaborative effort funded by the Defense Advanced Research Projects Agency involving UCLA and USC), I was responsible for designing algorithms and software for controlling and monitoring a large network of autonomous computer sensor nodes. This software was integrated with software from several other teams around the country for a set of field demonstrations over a three-year period.

14. In the TEAMDEC project for the Air Force Research Laboratory, I led an effort to design and construct a collaborative, Internet-based decision making system. This Java-based system provided a geographically diverse team with Internet based tools to enable collaborative decision-making. On the server side, the system architecture made extensive use of database technology. This work was awarded first prize at the 2002 AOLCIT Research Day.

15. Another aspect of my work has involved computer security. As an example, one project included designing and implementing a computer architecture that protects the programs (and data) on the system from being reverse-engineered.

16. Other projects have involved the close coupling of computer hardware and software, including the writing of device drivers and simple operating systems, the design of hardware circuits, the design of new system architectures integrating low power data storage, architectures for secure computing, the modification of complex operating systems, and software for mediating between complex software packages. My work in e-textiles has focused on new architectures that integrate fault tolerant networks. I have designed image transmission systems

for reliably transmitting images over wireless links using compression and error-correction techniques.

17. A detailed record of my professional qualifications is set forth in the attached Appendix A, which is my curriculum vitae, including a list of publications, awards, research grants, and professional activities.

**B. Materials Reviewed**

18. In connection with this declaration, I have read U.S. Patent No. 7,149,510 (“the ‘510 patent”), its prosecution history, and the documents cited in this declaration.

19. I have reviewed the proposed constructions in connection with these claim construction proceedings. My opinions regarding claim construction are based on my understanding of the parties’ proposed constructions as of the date of this declaration. If the parties alter those constructions after this declaration is submitted, I may, if appropriate and permitted, submit a supplemental declaration addressing any new constructions.

**C. Level of Ordinary Skill in the Art**

20. I have been asked to offer my opinion regarding the level of ordinary skill in the art with respect to each of the Asserted Patents. In my opinion, with regard to the ‘510 patent, a person of ordinary skill in the art would have a degree in computer engineering, computer science, electrical engineering, applied physics or a related field and at least two years of experience in the design and development of mobile devices and computer architecture as it relates to computer security. This description is approximate, and a higher level of education or skill might make up for less experience, and vice-versa.

**D. Scope of Opinions**

21. I understand the parties have provided agreed upon construction of various terms in the claims of the Asserted Patents. I have been asked to provide my opinions regarding the

meaning of certain disputed claim terms as understood by one of ordinary skill at the time of the invention. My opinions are based on my understanding of what the disputed claim terms and proposed construction were, and what the evidence relied upon by the parties was, as of the time that I executed this declaration.

**E. Legal Standards Relied Upon**

22. Certain legal principles that relate to my opinions have been explained to me.

23. I have been informed that ultimately the Court will determine the matter of how specific terms shall be construed. The intent of this declaration is to help inform the Court how a person of ordinary skill in the art would understand the meaning of certain disputed claim terms in the context of the Asserted Patents' claims, specification, and prosecution history in a manner that will assist the Court in the process of finding a proper set of constructions.

24. It is my understanding that, generally, terms found in a patent claim should be given their plain and ordinary meaning, as a person of ordinary skill in the appropriate art would understand them. Further, it is my understanding that a patentee can decide to act as their own lexicographer by explicitly defining terms to have specific meaning within the bounds of the patent specification. Further, it is my understanding that statements made to the patent office by the patentee or their legal representative during prosecution can serve to illuminate the proper scope of claim terms and such statements must be considered when one searches for the appropriate claim construction. Further, it is my understanding that a claim term that does not use "means" will trigger the rebuttable presumption that 35 U.S.C. §112(6) does not apply, and the presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. Similarly, when a claim term is governed by §112(6), whether such term is indefinite turns on whether one of skill in the

art would understand the specification to disclose a structure for that term. I have endeavored, to the best of my ability, to take into account all of these factors during the process of my analysis.

25. In determining the meaning of the claims, I have followed my ordinary practice for claim construction. My analysis comports with long-established principles of claim construction—giving a claim term its ordinary meaning that one of skill in the art, at the time of the invention and in light of the patent’s specification and prosecution history, would have given it, except in two unusual circumstances: (1) where the intrinsic record provides a special definition for the term; or (2) where the patentee disclaims a portion of the term’s ordinary meaning.

## II. TECHNOLOGY BACKGROUND

### A. '510 Patent Technology Background

26. The claims of the '510 patent describe a system for controlling access to a platform for a mobile terminal in a wireless telecommunications system. In the prior art, mobile terminal manufacturers designed, fabricated, and marked substantially complete mobile terminal systems that included all of the hardware and software needed for a phone. The inventors recognized that this approach does not provide the flexibility to satisfy the diverse requirements of multiple users. The claimed invention in the '510 patent implements a layered computer architecture comprising a “software services component,” “an interface component,” and an “access controller” comprising an “interception module” and “decision entity.” When a third party application is installed, loaded, or run in the platform, it attempts to access desired services in the software services component via an interface provided by the interface component. The access controller receives the request at the interception module, consults access and permission policies held in the security access manager, and uses the decision entity to determine whether the request should be granted. Permission is then granted or denied access to the software

services component as appropriate. This algorithm is described in claim 1, which reads as follows:

1. A system for controlling access to a platform, the system comprising:
  - (a) a platform having a software services component and an interface component, the interface component having at least one interface for providing access to the software services component for enabling application domain software to be installed, loaded, and run in the platform;
  - (b) an access controller for controlling access to the software services component by a requesting application domain software via the at least one interface, the access controller comprising:
    - (c) an interception module for receiving a request from the requesting application domain software to access the software services component;
    - (d) and a decision entity for determining if the request should be granted wherein the decision entity is a security access manager, the security access manager holding access and permission policies; and
    - (e) wherein the requesting application domain software is granted access to the software services component via the at least one interface if the request is granted.

(Identifiers “(a)”-“(e)” added).

### III. DISPUTED CLAIM TERMS FOR THE '510 PATENT

#### A. “Decision entity”

Ericsson's Proposal	TCL's Proposal
plain and ordinary meaning, no construction necessary	<p>This term is subject to § 112, p. 6.</p> <p><b>Function:</b> determining if the request should be granted and holding access and permission policies</p> <p><b>Structure:</b> security access manager 518 including a decision cache 310 and access control list 312 programmed to perform the algorithm shown in Fig. 7 at steps 286, 288, 294, and 292 and described in col. 9, ll. 40-63</p>
Claims - and - of the '510 patent.	

27. It is my opinion that a person of ordinary skill in the art at the time of the patent reading the claims would have understood the “decision entity” to be given its plain and ordinary meaning.<sup>1</sup>

28. It is my understanding that TCL agreed to plain and ordinary meaning<sup>2</sup> but is now arguing that this term is subject to 112(6) and has identified a particular structure for this term. I disagree with this position and with this identification of the structure. I address each of those arguments below from the perspective of a person of ordinary skill in the art.

29. The claim itself explicitly defines the structure for the “decision entity” as a “security access manager, the security access manager holding access and permissions policies.” A person of ordinary skill in the art would understand that the “decision entity” is a particular software structure (the security access manager (SAM)) that is holding “access and permission policies” that it can use as the basis for determining whether or not to grant a request from “application domain software to access the software services component.” The specification describes numerous embodiments of this structure. *See, e.g.*, ’510 patent at 7:25-45; 7:61-8:20; 9:27-63; 9:64-10:26.

30. I disagree that a person of ordinary skill in the art would understand the “decision entity” to have the structure proposed by TCL. Holding access and permissions policies and software for making permission decisions is *the only* structure necessary to support TCL’s identified function of “determining if the request should be granted and holding access and permission policies.”

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<sup>1</sup> This is consistent with my declaration filed on August 14, 2015.

<sup>2</sup> This is consistent with my declaration filed on August 14, 2015.

31. First, TCL is proposing to add two additional elements to the structure not required to perform its identified function: the “access control list” of Figure 9 and a “decision cache.” But the patent makes clear TCL’s cited function can be performed without the access control list of Figure 9 or a decision cache. *See, e.g.*, 7:25-45 (describing an embodiment that does not require an access control list); 7:61-8:20 (describing an embodiment that does not require an access control list); 9:64-10:26 and Fig. 10 (describing an access control list that “stores access records of a different format from that illustrated in FIG. 9”); 10:45-57 (describing another access control list that stores access records of a different format from that illustrated in FIG. 9); claim 3 (specifying an “associated permission collection” and “access control collection” to hold access and permissions policies); 9:24-26 (explaining that “[t]o further expedite the permission decision, a decision cache *may be utilized* in accordance with an embodiment of the IM 223 as described below) (emphasis added); claim 4 (specifying the use of a decision cache, which is not required by claim 1). Further, the specification provides that if an “access control list” and “decision cache” are used, they can be located in the “interception module” rather than the “security access manager.” *See, e.g.*, Fig. 10.

32. TCL’s proposed structure fails to properly include the explicit multiple alternative embodiments of the SAM in the ‘510, but instead limits the structure to a single, incorrectly stated<sup>3</sup> structure. TCL ignores the ‘510’s explicit statements regarding multiple embodiments of the SAM (“[t]he SAM 518 may grant access to the native platform services in a variety of ways, one example of which is illustrated in FIGS. 6A and 7”, see 7:61-63) and ignores other embodiments that describe the SAM including 7:61-34 and 9:64-10:56.

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<sup>3</sup> TCL’s proposed structure indicates that Figure 7 is described at 9:40-63. This is not correct. Figure 7 is described is described elsewhere in the patent. Column 9:40-63 is part of the specification (9:27-63) that describes Figure 9, where this section provides “details of the SAM 518 according to an exemplary embodiment.”

33. TCL's proposed structure also improperly reads in additional limitations from Figure 7 not necessary to perform TCL's proposed function. TCL argues the function "determining if the request should be granted and holding access and permission policies" corresponds, in part, to the steps 288, 292, and 294 in Figure 7. But steps 288 and 292 in the Figure 7 algorithm are taken *after* the decision is made (i.e., the identified function has been performed) and are not identified as steps performed by the SAM in the claimed embodiment. Further, the specification states step 294 is optional because it is allowing for an optional scenario in which the user may be asked to separately approve access. 8:26-27 ("*In a further option*, the permission decision may require an approval procedure.") (emphasis added). To a person of ordinary skill in the art, steps 288, 292, and 294 of the Figure 7 algorithm are not required structure for "determining if the request should be granted." TCL has, in fact, failed to include in its identified structure the portion of the specification (8:11-13) that describes how the SAM "determines" in Figure 7.

34. Second, a person of ordinary skill in the art would understand the step-by-step algorithm described by the claim and specification to provide the structure for the "decision entity." Claim 1 shows how the "decision entity" interacts with the other components as part of an algorithm used to secure protected services on a device from applications. With reference to claim 1 in section II.A above, limitation 1(c) provides that the interception module "receives a request . . . to access the software services component" of limitation 1(a). Limitation 1(d) provides that the decision entity "determines if *the* request [of limitation 1(c)] should be granted." Limitation 1(e) provides that if "*the* request is granted [in limitation 1(d)]," the requesting application domain software "is granted access to the software services component."

**B. “Interception module”**

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	<p>This term is subject to § 112, p. 6.</p> <p><b>Function:</b> receiving a request from the requesting application domain software to access the software services component</p> <p><b>Structure:</b> None disclosed</p>
Claims - and - of the ’510 patent.	

35. It is my opinion that a person of ordinary skill in the art at the time of the patents reading the claims would have understood the term “interception module” to have their plain and ordinary meaning.

36. It is my understanding that TCL agreed to plain and ordinary meaning<sup>4</sup> but is now arguing that this term is subject to 112(6) and, further, that there is no disclosed structure in the specification. I disagree. I address each of those arguments below from the perspective of a person of ordinary skill in the art.

37. The specification includes numerous embodiments of the structure performing the function TCL identified. Each of these embodiments is described in the context of one of the various algorithms described in the patent for checking requests from applications to access the software services component. For example, in one embodiment, the interception module is used to “receiv[e] a request from the requesting application domain software to access the software services component.”’510 Patent at 2:55-58. In another embodiment, the interception module “intercepts non-native application service requests from the EXE environment to the native platform services.” *Id.*, at 7:47-51 and Fig. 5. In another embodiment, the interception module “intercepts the service request, which includes an ID tag of the requesting non-native

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<sup>4</sup> This is consistent with my declaration filed on August 14, 2015.

application.” *Id.*, at 8:3-5 and Figs. 6A, 7. In other embodiments, the interception module “intercept[s]” service requests from non-native applications to access the software services component. *Id.*, at 8:35-36, 8:48-50, 9:55-60 and Fig. 6B, 8A, and 8B. . A person of skill in the art would understand these to be examples of software structures for the “interception module.”

38. The term “interception module,” when read in the context of the full claim connotes a sufficiently definite structure, i.e., a particular software structure used to “receiv[e] a request from the requesting application domain software to access the software services component.” *See, e.g.*, '510 patent, at claim 1; 2:55-59; 3:15-20. A person of ordinary skill in the art would understand the step-by-step algorithm described by the claim to inform the structure for the term “interception module.” In particular, limitation 1(c) provides that the interception module “receives a request . . . to access the software services component” of limitation 1(a). Limitation 1(d) provides that the decision entity “determines if *the* request [of limitation 1(c)] should be granted.”

I declare under penalty of perjury that the foregoing is true and correct and this declaration was executed on May 31, 2017 in Blacksburg, Virginia.



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Mark Jones, Ph.D.